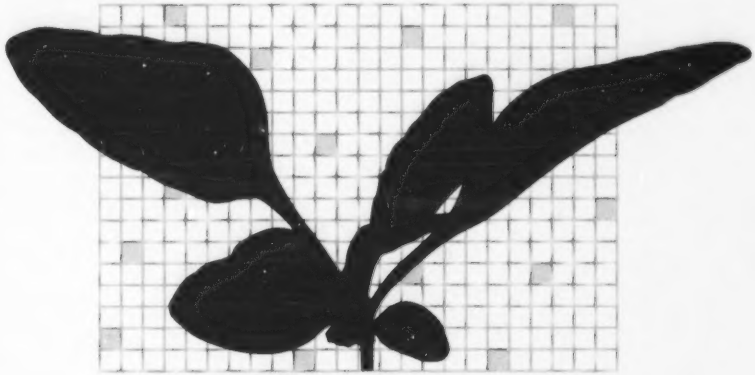
WEED SEEDLING IDENTIFICATION



Alberta
AGRICULTURE

Agdex 640-3

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Acknowledgement

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1986 09 15m

WEED SEEDLING IDENTIFICATION

Alberta
AGRICULTURE

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Wild cucumber	25
Wild mustard	22
Wild oat	4
Wild tomato	8
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Glossary

Alternate leaves — single leaves attached at different positions on the stem, not opposite each other.

Auricle — earlike appendage which wraps around the stem of some grass plants at the junction of the leaf blade and the stem.

Basal leaves — leaves attached to the base of the plant.

Biennial — a plant which takes more than one growing season, but not more than two years, to complete its life cycle.

Blade — the expanded, usually flat, part of a leaf.

Bloom — a whitish, powdery covering.

Cotyledons — the first leaf or pair of leaves originating from the seed (seed leaves).

Glossy — having a shiny surface.

Keel — prominent ridge on the back of a leaf sheath or blade usually along the midrib.

Ligule — flap of membranous tissue or fringe of hairs on the inside of a grass leaf where the blade joins the stem.

Mid-vein — (midrib) — the central vein or rib of a leaf.

Node — joint in the stem where leaves or branches are attached.

Opposite leaves — two leaves originating from the same point on the stem and opposite each other.

Petiole — the stem of a leaf.

Rosette — a flat, circular cluster of leaves formed at the ground surface. Usually an overwintering stage.

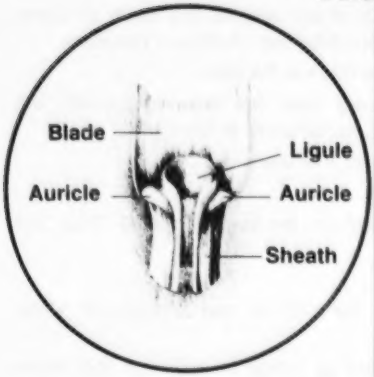
Sheath — the lower part of a leaf that surrounds the stem or shoot.

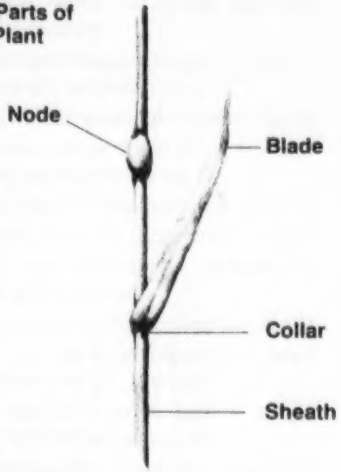
True leaves — leaves that develop after the cotyledons.

Whorl — three or more leaves attached at the stem at the same point (whorled).

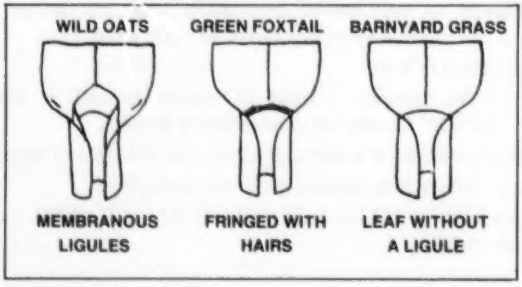
Seedling Grass Identification

Vegetative Parts of a Grass Plant

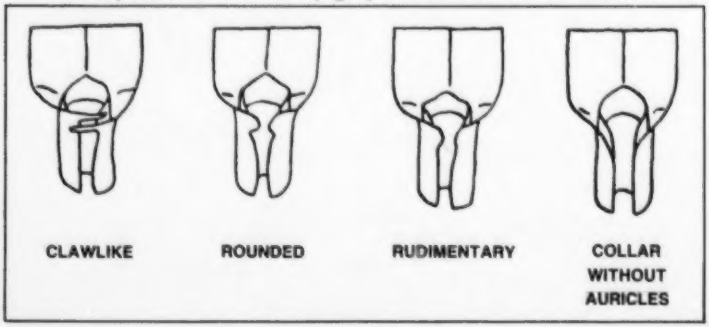




Types of Ligules



Shapes of auricles and *(right)* a collar without auricles.



Barnyard grass
Echinochloa crusgalli

- no auricles
- no ligule
- leaf hairless or 1-3 solitary hairs at base of blade

Green foxtail
Setaria viridis

- no keel
- leaf margins and surface rough with fine upward pointing barbs
- ligule a fringe of hair 1.5-2.0 mm long
- no auricles

Persian darnel
Lolium persicum

- shiny dark green on upper leaf surface
- base of stem is reddish-purple
- membranous ligule to 1 mm long
- auricles usually present

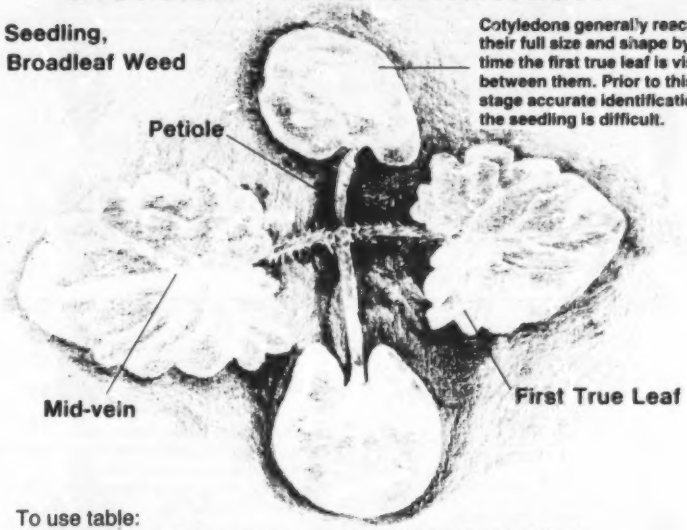
Proso millet
Panicum miliaceum

- leaf blade and sheath covered with dense stiff hairs
- ligule a fringe of hairs fused at the base, 3.0-4.0 mm long

Wild oats
Avena fatua

- Counter-clockwise leaf twist
- no auricles
- hairs on leaf margins
- membranous ligule

Broadleaf Weed Identification


Seedling,
Broadleaf Weed
Cotyledons generally reach their full size and shape by the time the first true leaf is visible between them. Prior to this stage accurate identification of the seedling is difficult.
Petiole
Mid-vein
First True Leaf

To use table:

a) Compare cotyledon shape with shape in left hand column.

b) When similar shape is located turn to pages indicated and compare true leaves in photos with weed specimen for identification.

NOTE: Weed species are arranged according to cotyledon shape.

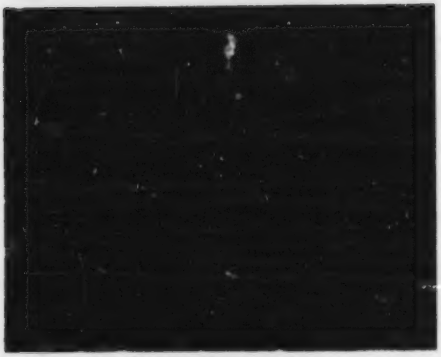
Cotyledon Shape	Weed		Page
	• Corn spurry	usually less than 1 mm broad, a few mm in length, almost of uniform breadth throughout.	8
	• Russian thistle		8
	• Wild tomato		8
	• Cocklebur	at least 10 times as long as broad, top tapering to a point, more or less long stalked, tapered gradually into the stalk, usually broader in the middle than at the ends.	9
	• Chickweed	narrow-oval to ovate, top tapering to a point, base rounded or tapering into the stalk.	9
	• Absinth	with broad base, or slightly narrowed at base, at most 2-3 times as long as broad, compact, occasionally fleshy.	9
	• Pineappleweed		10
	• Scentless chamomile		10

Cotyledon Shape	Weed		Page
	• Common groundsel	elongated, elliptical, with a more or less long stalk.	10
	• Common peppergrass		11
	• Flixweed		11
	• Kochia		11
	• Lamb's quarters		12
	• Prostrate knotweed		12
	• Prostrate pigweed		12
	• Redroot pigweed		13
	• Bladder campion	a very variable group, oblong to broadly oval, rounded at the base or narrowing to a more or less long stalk. All have a compact form with rounded top.	13
	• Burdock		13
	• Canada thistle		14
	• Cleavers		14
	• Cow cockle		14
	• Curled dock		15
	• Dandelion		15
	• Diffuse knapweed		15
	• Milkweed		16
	• Narrow-leaved hawk's beard		16
	• Night-flowering catchfly		16
	• Russian pigwed		17
	• Smartweeds		17
	• Thyme-leaved spurge		17
	• White cockle		18
	• Wild buckwheat		18
	• Yellow whitlow grass		18
	• Bluebur	usually markedly stalked (stalk occasionally very short), gradually tapering or rounded at the base, generally broadest at or above the middle.	19
	• Giant ragweed		19
	• Nodding thistle		19
	• Shepherd's purse		20
	• Sow thistle		20
	• Stinkweed		20
	• Viper's bugloss		21

Cotyledon Shape	Weed		Page
	• Dog mustard	top flat with slight indentation, base gradually tapering into the stalk, broadest above the middle.	21
	• False ragweed		21
	• Field bindweed	top deeply indented, base gradually narrowed into stalk.	22
	• Wild mustard		22
	• Yellow toadflax	top rounded, sides incurved, gradually tapered into stalk at the base.	22
	• Round-leaved mallow	traingular shape, top rounded.	23
	• Wild cranesbill	broader than long.	23
	• American dragonhead		23
	• Hempnettle	outline of the cotyledons orbicular-oval, the base has a pointed auricle on either side of the stalk, or is rounded.	24
	• Tartary buckwheat		24
	• Stork's-bill	three-lobed or deeply divided into three.	24
	• Biennial wormwood	indented at top.	25
	• Wild cucumber	with a broad base very large and fleshy.	25

Corn spurry
Spergula arvensis

- leaves similar to Russian thistle but occur in whorls on the stem
- leaves may be slightly sticky and have blunt tips



Russian thistle
Salsola pestifer

- long, fleshy, needle-like leaves and cotyledons
- leaves have sharp tips

Wild tomato
Solanum triflorum nutt.

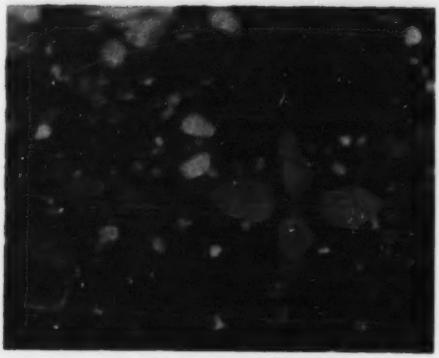
- leaves deeply lobed with scattered hairs

Cocklebur
Xanthium spp.

- coarse-veined true leaves
- first two leaves paired, later leaves alternate

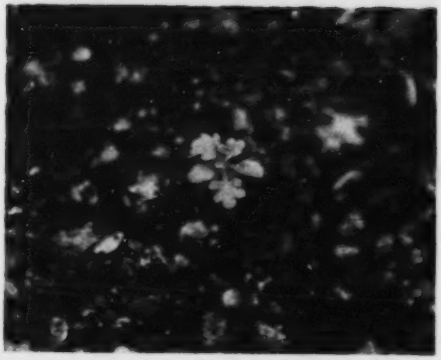
Chickweed
Stellaria media

- cotyledons slightly constricted at tip
- conspicuous line of hairs on one side of stem later in development



Absinth
Artemisia absinthium

- leaves silvery, hairy on both surfaces
- characteristic odor

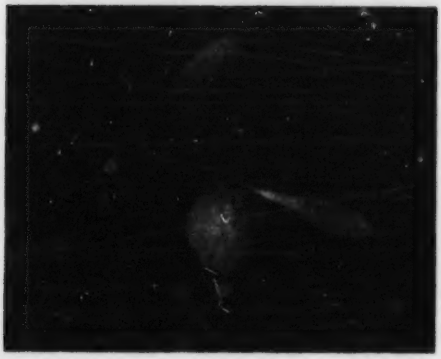


Pineappleweed
Matricaria matricarioides

- extensively divided leaves, resembles a coarse carrot top
- leaves have strong pineapple odor when crushed

Scentless chamomile
Matricaria maritima

- similar to pineappleweed
- leaves have no odor when crushed
- more finely divided than pineappleweed

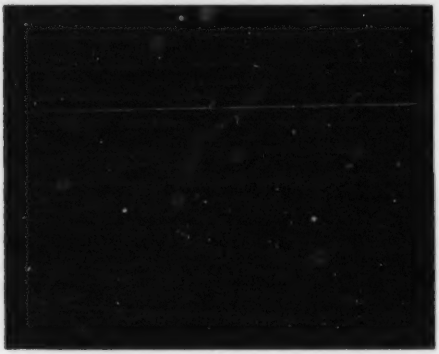


Common groundsel
Senecio vulgaris

- cotyledons and leaf stalks deeply grooved at base
- leaves alternate, prominent keeled mid-vein underneath
- forms rosette in early stages

Common peppergrass
Lepidium densiflorum

- granular bloom on leaves
- base of leaf stalk downy, whitish appearance
- forms rosette



Flixweed
Descurainia sophia

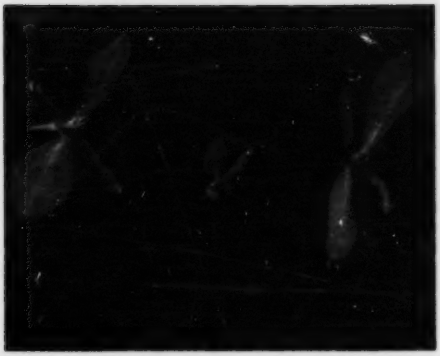
- first two true leaves are 3 lobed
- other leaves finely divided, grey-green
- covered with fine hairs
- leaves alternate except for first two
- odorless

Kochia
Kochia scoparia

- cotyledons bright pink underneath
- leaves covered with soft, fine hairs
- no odor

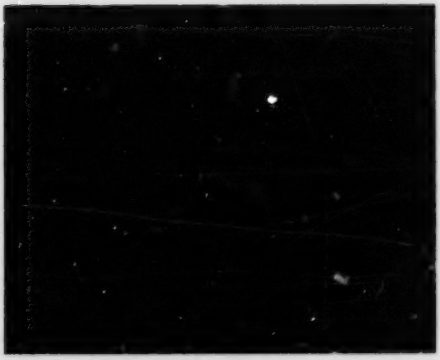
Lamb's quarters
Chenopodium album

- underside of cotyledons and young leaves pinkish
- young plant covered with silvery particles, especially conspicuous on underside of leaves



Prostrate knotweed
Polygonum aviculare

- cotyledons long and narrow
- papery sheath at base of leaf
- common on hard packed areas

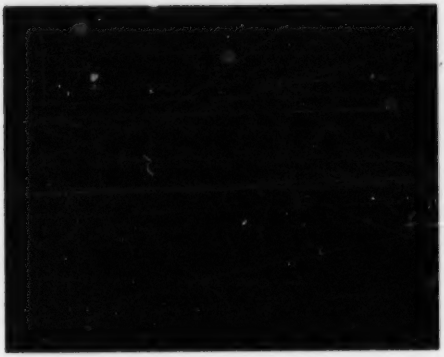


Prostrate pigweed
Amaranthus blitoides

- cotyledons longer than redroot pigweed
- first true leaves longer than they are broad

Redroot pigweed
Amaranthus retroflexus

- underside of cotyledons and base of stem dark red
- first true leaves prominently veined, as long as broad
- mid-vein of first true leaves extends as a small temporary bristle in the notched tip



Bladder campion
Silene cucubalus

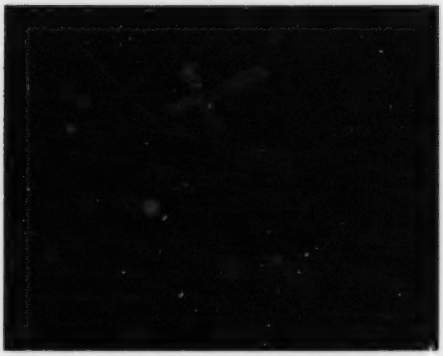
- hairless
- cotyledons slightly petioled
- true leaves in pairs, united at base

Burdock
Arctium minus

- waxy surface on cotyledons
- true leaves petioled
- true leaves coarse-veined and downy on undersurface
- leaf stalk flared and clasping at base to form a tubular sheath

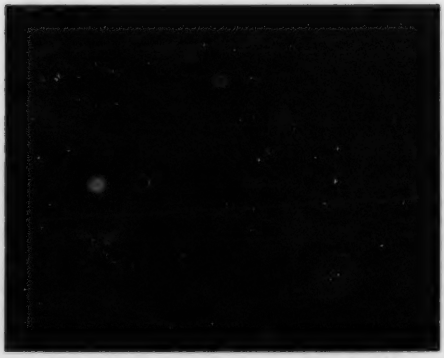
Canada thistle
Cirsium arvense (L.) scop.

- leaves ovate to lanceolate, margin with numerous triangular indentations and sharp spines



Cleavers
Galium aparine

- square stem with stiff, downward pointing hairs (clings to clothing)
- true leaves in whorls of 4



Cow cockle
Saponaria vaccaria

- leaves hairless, long, narrow, fleshy, keeled mid-vein
- leaves opposite, united at base

Curled dock
Rumex crispus

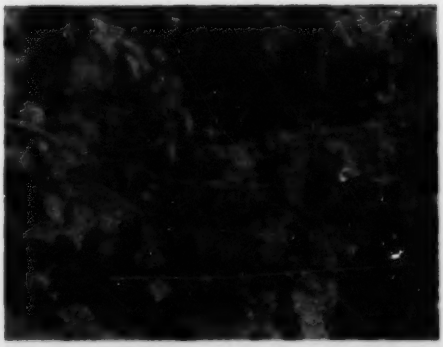
- large distinct true leaves with veins prominent beneath
- papery sheath at base of leaf
- emerging leaf has sides tightly rolled under

Dandelion
Taraxacum officinale

- cotyledons not fleshy, margins vary
- milk sap

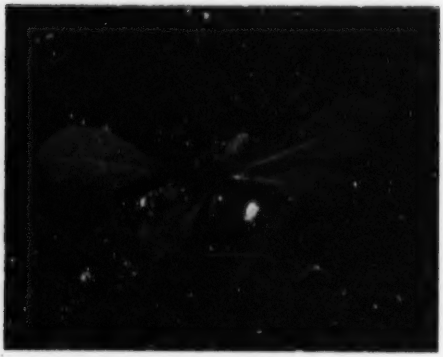
Diffuse knapweed
Centaurea diffusa lam.

- leaves alternate, divided into narrow segments, with short stiff hairs



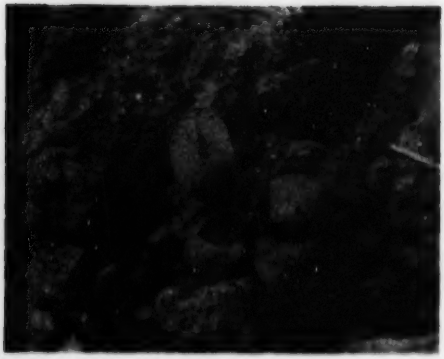
Milkweed
Asclepias spp.

- milky juice
- cotyledons have few granules above, shiny beneath
- true leaves in pairs, prominent mid-vein beneath, short hairs on margin
- leaves enlarge greatly as plant ages



Narrow-leaved hawk's-beard
Crepis tectorum

- leaves not hairy
- distinct barbs on margin of true leaves



Night-flowering catchfly
Silene noctiflora

- leaves in pairs, spoon-shaped, widen towards end before tapering to a point, hairs on margins

Russian pigweed
Axyris amaranthoides

- first true leaves tapered toward both ends, prominent mid-vein

Smartweeds and Lady's thumb
Polygonum spp.

- cotyledons attached at 180° from each other when viewed from above
- papery sheath circles the stem at base of leaf petiole

Thyme-leaved spurge
Euphorbia serpyllifolia

- cotyledons and leaves pinkish underneath
- true leaves have indented edges around top of leaf, pinkish line in middle of leaf
- plants have white, milky sap

White cockle
Lychnis alba

- cotyledons often somewhat constricted at the tip
- hairs on margins of true leaves

Wild buckwheat
Polygonum convolvulus

- cotyledons attached at 120° to each other when viewed from above
- papery sheath at base of leaf petiole
- true leaves arrowhead shaped, longer than they are broad

Yellow whitlow grass
Draba nemorosa L.

- cotyledons very small
- forms rosette
- flowering quite early in the spring

Bluebur
Lappula echinata

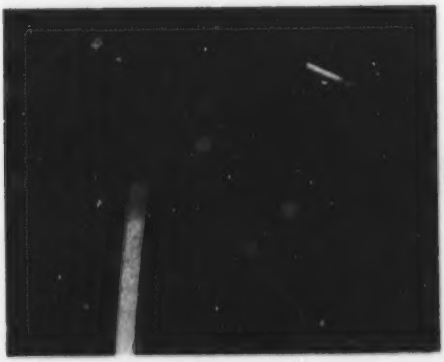
- covered with stiff hairs
- mousy smell
- distinct central crease in true leaves

Giant ragweed
Ambrosia trifida

- leaves and stem rough to touch
- true leaves after first pair are distinctly 3-lobed

Nodding thistle
Carduus nutans

- cotyledons have broad white veins
- margins of true leaves prickly
- veins prominent on undersurface of true leaves
- rosette first year (biennial), silver-grey color

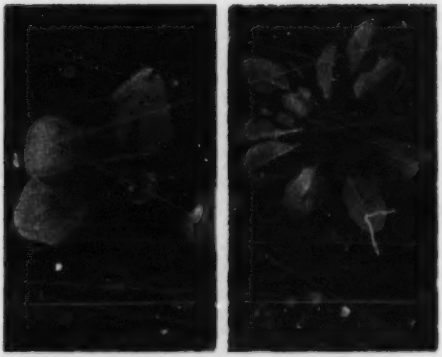


Shepherd's-purse
Capsella bursa-pastoris

- forms a rosette
- upper surface of true leaves slightly hairy
- basal leaves narrow into a stalk

Sow thistle
Sonchus spp.

- cotyledons fleshy
- milky sap
- soft prickles on later leaves



Stinkweed
Thlaspi arvense

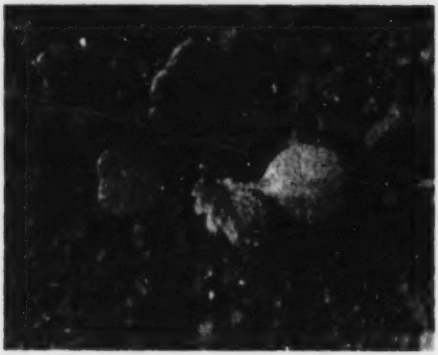
- hairless plant
- true leaves can be variable in shape, prominent and shiny veins beneath
- distinct odor especially when bruised
- often grows in rosette form

Viper's bugloss
Echium vulgare

- covered with short, stiff hairs
- rosette first year (biennial)
- upper surface of leaf is rough or worty

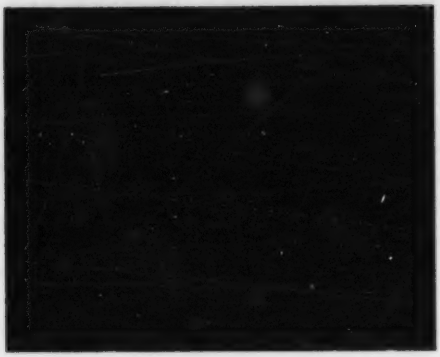
Dog mustard
Erucastrum gallicum

- cotyledons less notched than wild mustard
- germinates late



False ragweed
Iva xanthifolia

- hairs on margins of cotyledons
- true leaves opposite
- fine whitish-hairs on leaf blades



Field bindweed
Convolvulus arvensis

- no papery sheath at base of stem as in the buckwheat family
- prominent veins on undersurface of true leaves

Wild mustard
Sinapis arvensis

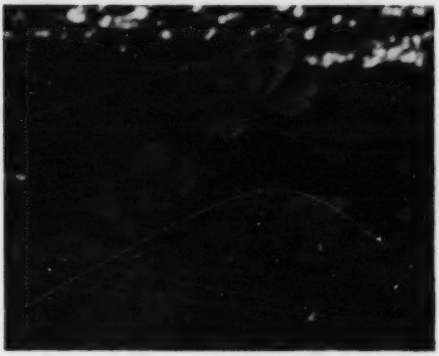
- hairs on leaf and stem
- leaf shape is variable
- indented cotyledon tip

Yellow toadflax
Linaria vulgaris

- cotyledons have a distinctive bump near tip
- first true leaves smooth and egg-shaped, later leaves longer and more slender
- no milky juice

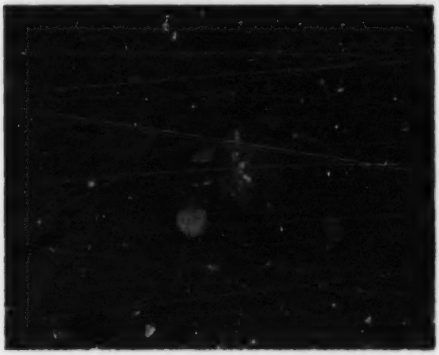
Round-leaved mallow
Malva pusilla = M. rotundifolia

- distinct cotyledons appear prominently veined with glossy surface
- leaves crinkly, indented margins, cup-shaped, long stalks



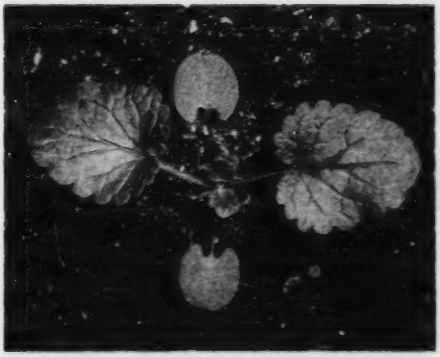
Wild cranesbill
(Bicknell's geranium)
Geranium bicknellii

- cotyledons covered with granular bloom above, veins are depressed
- scattered, short hairs on leaves and leaf stalks



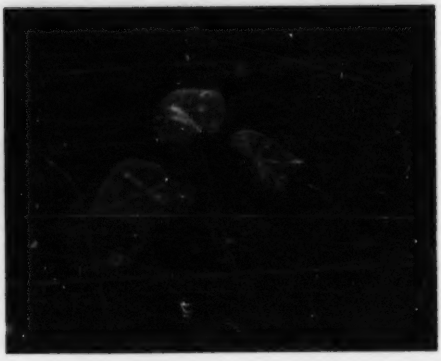
American dragonhead
Dracocephalum parviflorum

- cotyledons rounded with backward pointing projections
- lower ⅔ of first true leaves round-toothed
- forms a rosette (biennial)



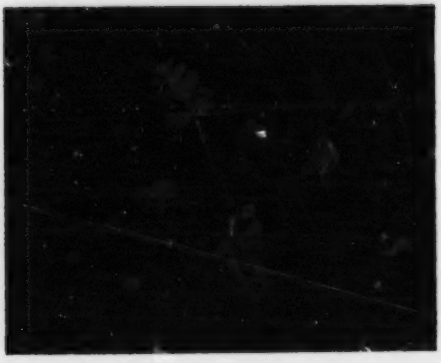
Hemp nettle
Galeopsis tetrahit

- cotyledons distinctly notched
- true leaves are opposite and hairy
- square stem



Tartary buckwheat
Fagopyrum tataricum

- cotyledons broad and notched
- papery sheath at base of leaf
- triangular leaves, as broad as long

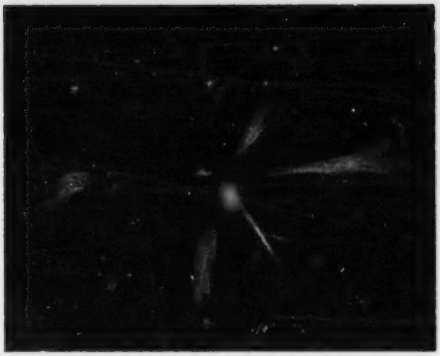


Stork's-bill
Erodium cicutarium

- three-lobed cotyledons
- finely divided true leaves

Biennial wormwood
Artemisia biennis

- cotyledons united at base to form a small fleshy cup
- leaves grey-green and mealy, ridged veins on upper surface
- wormwood or sage scented when bruised



Wild cucumber
Echinocystis lobata

- cotyledons thick green, a few veins evident
- leaves pale green rough on both sides